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# *RELAX AND TRY THIS INSTEAD: ABBREVIATED HABIT REVERSAL FOR MALADAPTIVE SELF-BITING*

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We evaluated the effectiveness of an abbreviated habit reversal procedure to reduce maladaptive oral self-biting in an adolescent boy in residential care. Treatment involved a combination of relaxation and two competing responses. Results of a withdrawal design and two posttreatment medical evaluations indicated that the intervention eliminated the biting and the tissue damage it caused.

DESCRIPTORS: habit disorders, habit reversal, anxiety, self-biting, behavioral assessment

Lay observation suggests that humans are prone to nervous habits (e.g., picking, biting, wiggling, etc.). Recent research supports and extends the lay view with data on prevalence and on the tension-relieving and boredom-relieving functions of nervous habits (Woods & Miltenberger, 1996). Although the habits are mostly benign, their excessive practice can be maladaptive. Self-biting (e.g., of the lips and gums) is one such habit, and it is common in children in residential care (estimated at 6% in nonhandicapped populations; Tröster, 1994). Unambiguous indicators of maladaptive status include bleeding and tissue damage. Various treatments for self-biting have been described, the most effective of which appears to be habit reversal (Azrin, Nunn, & Frantz-Renshaw, 1982). In its unabbreviated form, however, habit reversal is complex and effortful. Fortunately, recent investigations have shown that abbreviated versions can be successful with various nervous habits (e.g., Woods, Miltenberger, & Lumley, 1996). Consistent with that line of inquiry, this study evaluated abbreviated habit reversal for maladaptive self-biting in an adolescent in residential care.

## METHOD

Sam, age 15, was referred to Father Flanagan's Boys' Home (Boys Town) by his mother for truancy, fighting at school, and being out of control. During a diagnostic intake interview, Sam appeared to be tense and exhibited several seemingly anxious behaviors such as leg shaking, lowered eyes, blushing, and, of central importance to this study, inner lip biting with such intensity that his mouth filled with blood. He reported that he been biting himself since grade school when he felt nervous, and the biting often resulted in bleeding. He also reported that the frequency and intensity of biting had increased at Boys Town because

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of his apprehension about placement and because he was not allowed to smoke cigarettes. Inspection of the inside of Sam's lips revealed a jagged swollen appearance with discoloration (small hematomas). In addition, Sam had been diagnosed as having overanxious disorder.

*Dependent measure.* Although various persons had observed Sam's lip biting, their estimate of its frequency was unlikely to be a useful measure because of its mostly covert practice. Self-monitoring was an option, but its validity as a sole outcome measure for applied behavioral research is questionable. To augment self-monitoring, we supplied Sam with white cotton handkerchiefs labeled sequentially with day and date. Each day, Sam carried a new handkerchief, pressed it to bitten mouth tissue following a biting episode, and returned it to his pocket. We instructed him to fold the handkerchief so he could dab his lip with a clean spot after every episode and then place the handkerchief in an individual zip-lock plastic bag at the end of the day. We collected the used handkerchiefs weekly, counted the spots per handkerchief, and used these counts as daily estimates of the severity of lip biting.

*Treatment.* Habit reversal includes multiple components (Azrin et al., 1982), two of which (relaxation and competing responses) were used in this study. The relaxation component required that Sam sit in a chair, practice diaphragmatic breathing (i.e., deep, slow breathing from the belly rather than the chest) and progressive muscle relaxation (i.e., tensing for 5 s, then relaxing five major muscle groups beginning with the calves and ending with shoulders), and repeat a relaxing self-statement (i.e., "My arms and legs are heavy and warm, my body is calm, quiet, and relaxed."). Competing responses included gum chewing and tongue-lip rubbing. Gum chewing involved a ready supply of chewing gum and permission from school personnel and family teachers to chew in all

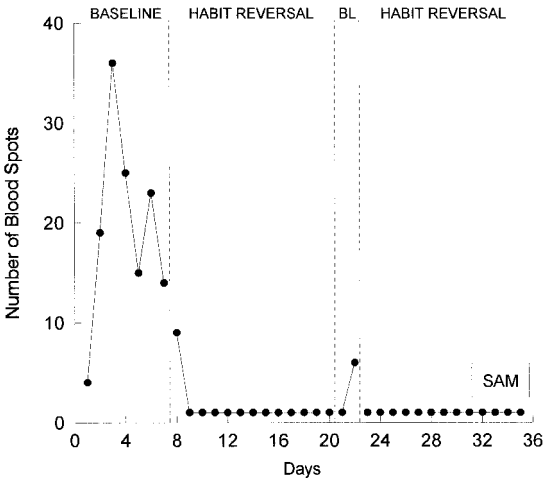


Figure 1. The number of blood spots counted on daily handkerchiefs across conditions.

environments. Tongue-lip rubbing involved Sam's stroking his tongue against the inside of his lower lip. Specifically, he was instructed (a) to conduct a brief relaxation session at least once a day and whenever he felt tense or nervous, (b) to chew a piece of sugarless gum in stress-inducing situations or whenever he caught himself engaging in lip biting, and (c) to rub his tongue over his lip repeatedly if he did not have gum or could not chew it at a particular time. Although no formal treatment integrity assessment was conducted, during weekly sessions Sam reported consistent and appropriate use of handkerchiefs and all treatment components.

## RESULTS AND DISCUSSION

A withdrawal design showed high rates of blood spots during baseline, rapid reduction to zero rates during treatment, reemergence of blood spots during a brief withdrawal of treatment and an immediate return to zero rates when treatment was reimplemented (see Figure 1). For ethical reasons, the withdrawal phase was terminated as soon as evidence of biting emerged. One month following the last data collection day, a staff

physician at the Boys Town clinic examined Sam's mouth and reported only minor irritation of the mucosal tissue, no evidence of biting within the previous 48 hr, and evidence of healing. After 2 months, the physician repeated the exam and reported no evidence of irritation or biting and substantial evidence of healing.

This study extends the literature on treatment of habits in a few important ways. First, the competing responses were both contingently and noncontingently practiced, even though contingent practice is more conventional for habit reversal. Second, the study did not include awareness training, a staple of full-spectrum and abbreviated habit reversal treatments (Azrin et al., 1982; Woods et al., 1996). Third, although relaxation is not often included in abbreviated habit reversal, it was used here. Its face validity was established by Sam's apparent problems with anxiety; its functional role awaits additional research. Fourth, blood spots were novel as a method for assessing habit treatment, and they may also have had a motivational function (e.g., reinforcing treatment compliance with declining size and number of blood spots).

These results should be interpreted in light of some limitations. First, formal measures of treatment integrity were not obtained, and no independent verification of the relationship between blood spots and lip biting was established. A decelerating trend during baseline and a relatively brief withdrawal phase limit conclusive evaluation of the treatment. Finally, although the jagged swollen appearance of Sam's inner lip made the tissue damage caused by biting readily apparent (even to lay observers), a preinvestigation medical evaluation would have added to the study. These limitations notwithstanding, our results replicate the effects of full-spectrum habit reversal for similar oral habits (Azrin et al., 1982) and suggest that a simplified version may be just as effective. Our results thus extend a growing line of research showing that a variety of nervous habits respond to simplified versions of habit reversal (e.g., Woods et al., 1996). Future research might expand this area of inquiry by addressing the limitations mentioned above and by testing the functional role of relaxation compared to competing responses in the treatment of maladaptive habits.

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